

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN Session-2023-2024

Discipline: Mechanical Engg. Semester: 4th


Subject: TOM

Name of the Teaching Faculty: Soumya Prakash Rath

Subject: TOM No. of Days/per week class allotted : 4

Semester From Date : 16-01-2024 To Date : 26-04-2024 No. of Weeks : 15

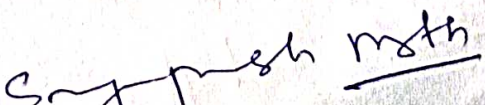
Week	Class Day	Theory /Practical Topics
1	01	Introduction of machine and Simple mechanism.
	02	Kinematic links and types. Kinematic pair and types.
	03	Kinematic chain and its types Types of joints in a chain.
	04	Mechanism Kutzbach criterion for plane mechanism.
2	01	Inversion of mechanism four-bar-link mechanism
	02	Mechanism of higher pair and lower pair.
	03	Cam and follower Types of followers
	04	Previous year question discussion.
3	01	Friction and types of friction Law's of friction.
	02	Angle of friction, Angle of repose. Coefficient of friction
	03	Screw friction, Description helix. helix angle, pitch, lead
	04	Friction in screw Jack Friction bet ⁿ screw and nut


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Week	Class Day	Theory / Practical Topics
4	1	Torque required to lift/lower the load by the screw jack.
	2	Efficiency of screw jack, Problem Solving.
	3	Friction in Journal Bearing. Friction Circle
	4	Description of Roller, needle roller Ball Bearing.
5	1	Torque transmitted by the flat pivot and conical pivot bearing.
	2	Single and multiple type flat collar bearing.
	3	Working of clutches and frictional Breaker
	4	Working of Absorption type Dynamometer.
6	1	Power transmission by belt drives gear and chain drives.
	2	Velocity ratio of belt drive. slip and creep of belt.
	3	Length of Belt, ratio of driving tension
	4	Centrifugal Tension and maximum tension in Belt.


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7	1	Power transmission by the belt, Condition for maximum power.
	2	Determination of belt thickness & width for open belt drive.
	3	Solving problems .
	4	V-Belt and V-belt drive.
8	1	V-Belt vs Flat Belt drives.
	2	Ratio of driving tension for V-Belt
	3	Gear drives and its terminology.
	4	Gear train and its types (Simple, Compound, Reverted & Epicyclic)
9	1	Function of Centrifugal Governor
	2	Classification of Governor
	3	Working of Watt Governor, drive(h) height of Watt Governor.
	4	Working of Porter Governor, Derive N'

Srinivasa Mohan
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Week	Class Day	Theory / Practical Topics
10	1	Working of Proel Governor Derive N.
	2	Working of Hartnell Governor Derive N.
	3	Sensitivity and stability of Governor.
	4	Isochronous Governor and hunting.
11	1	Solving previous year question.
	2	Function of flywheel, Comparison bet ⁿ flywheel & Governor
	3	Fluctuation of Energy and Co-efficient of fluctuation of Speed.
	4	Solving numerical problem
12	1	Concept of static and dynamic balancing.
	2	Balancing of several member rotating in same plane.
	3	Balancing of several masses rotating in different planes.
	4	Balancing of several masses rotating in same plane.


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Week	Class Day	Theory /Practical Topics
13	1	Principle of Balancing of Reciprocating masses.
	2	Primary and Secondary unbalance of forces of reciprocating masses.
	3	Causes and effect of unbalancing.
	4	Differences bet ⁿ Static and Dynamic balancing.
14	1	Introduction to vibration and machine parts.
	2	Amplitude, time period, frequency and cycle.
	3	Classification of vibration.
	4	Discussion of numerical natural, Forced and Damped vibration.
15	1	Longitudinal and Transverse vibration.
	2	Logarithmic decrement, Damping factor, whirling of shaft.
	3	Causes and Remedies of vibration.
	4	Solving Numerical, Previous Year questions. discussion -


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